WHAT IS CLAIMED IS:

1. A method of stimulating remyelination of central nervous system axons in a mammal in need of such therapy which comprises administer to said mammal an effective amount of a monoclonal autoantibody selected from the group consisting of mAb SCH 94.03, SCH 79.08, O1, O4, A2B5, HNK-1, active fragments thereof, and natural or synthetic autoantibodies having the characteristics thereof.

2. The method of Claim 1 wherein the method of administration is intravenous administration.

3. The method of Claim 1 wherein the method of administration is intraperitoneal administration.

4. The method of Claim 1 wherein said amount of monoclonal antibody administered is between from about 0.5 mg/kg to about 400 mg/kg.

5. A method of stimulating the proliferation of glial cells in central nervous system axons in a mammal in need of such therapy which comprises administering to said mammal an effective amount of a monoclonal autoantibody selected from the group consisting of mAb SCH 94.03, SCH 79.08, O1, O4, A2B5, HNK-1, active fragments thereof, and natural or synthetic autoantibodies having the characteristics thereof.

6. The method of Claim 5 wherein the method of administration is intravenous administration.

7. The method of Claim 5 wherein the method of administration is intraperitoneal administration.

8. The method of Claim 5 wherein said amount of monoclonal antibody administered is between from about 0.5 mg/kg to about 400 mg/kg.

9. A method of treating a demyelinating disease of the central nervous system in a mammal in need of such therapy which comprises administering to said mammal an effective amount of a monoclonal autoantibody selected from the group consisting of mAb SCH94.03, SCH79.08, O1, O4, A2B5 and HNK-1, active fragments thereof, and natural or synthetic autoantibodies having the characteristics thereof.

10. The method of Claim 9 wherein said mammal is a human being having multiple sclerosis, or a human or domestic animal with a viral demyelinating disease, or a post-neural disease of the central nervous system.

11. The method of Claim 9 wherein the method of administration is intravenous administration.

12. The method of Claim 9 wherein the method of administration is intraperitoneal administration.

13. The method of Claim 9 wherein said amount of monoclonal antibody administered is between from about 0.5 mg/kg to about 400 mg/kg.

14. The method of Claim 9 wherein said mammal is a mouse infected with Strain DA of Theiler's murine encephalomyelitis virus.

15. A *in vitro* method of stimulating the proliferation of glial cells from mixed cell culture comprising:
a) culturing a mixed cell culture containing glial cells under condition sufficient for cell proliferation;

b) introducing into the mixed culture an effective amount of a monoclonal autoantibody selected from the group consisting of mAb SCH94.03, SCH79.08, O1, O4, A2B5, HNK-1, active fragments thereof, and natural or synthetic autoantibodies having the characteristics thereof, thereby producing a monoclonal antibody-treated mixed culture;
c) maintaining the culture of step b) under conditions sufficient for proliferation of monoclonal antibody-treated cells, thereby resulting in the proliferation of glial cells in the mixed culture; and
d) harvesting the glial cells from the mixed culture.

16. The method of Claim 18 wherein the mixed culture is obtained from rat optic nerve.

17. The method of Claim 18 wherein the mixed culture is obtained from rat brain.

18. A method of stimulating remyelination of central nervous system axons in a mammal in need of such therapy comprising:
a) culturing glial cells under conditions sufficient for cell proliferation thereby producing a glial cell culture;
b) introducing into the glial cell culture an effective amount of a monoclonal autoantibody selected from the group consisting of mAb SCH94.03, SCH79.08, O1, O4, A2B5, HNK-1, active fragments thereof, and natural or synthetic autoantibodies having the characteristics thereof, thereby producing a monoclonal antibody-treated glial cell culture;
c) maintaining the culture of step b) under conditions sufficient for proliferation of monoclonal antibody-treated cells;
d) harvesting the monoclonal antibody-treated cells from the culture, thereby obtaining glial cells; and

e) introducing the glial cells obtained in step d) into the central nervous system of the mammal, thereby stimulating remyelination of central nervous system axons.

19. A pharmaceutical composition comprising, as the active agent, an active fragment of a monoclonal autoantibody selected from the group consisting of mAb SCH94.03, SCH79.08, O1, O4, A2B5, HNK-1, and natural or synthetic autoantibodies having the characteristics of mAb SCH94.03, SCH79.08, O1, O4, A2B5 or HNK-1.

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